205.4 - Radioactive Solutions

These SRMs are intended for the calibration of radioactivity measuring instruments and for the monitoring of chemical and geochemical processes. They are calibrated in terms of activity per gram of solution. Each SRM is contained in a flame-sealed glass ampoule or bottle and, except as noted, consists of the radionuclide dissolved in an aqueous solution (usually acidic).

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"Radioactive SRM Purchasing Instructions & License Certification Form"

"Radioactive SRMs-General Info"

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SRM	4222d	4226D	4233f	4239	4251d	4274	4288B	4320b	4321d	4322d	4323c	4324B	4326a	4328C	4329a	4330C
Description	Carbon-14-n-hexadecane Radioactivity Standard	Nickel-63 Radioactivity Standard	Cesium-137 Radioactivity Standard	Strontium-90 Radioactivity Standard Solution	Barium-133 Radioactivity Standard	Holmium-166m Gamma-ray Emission Rate Standard	Technetium-99 Radioactivity Standard	Curium-244 Radioactivity Standard	Natural Uranium Radioactivity Standard	Americium-241 Radioactivity Standard	Plutonium-238 Radioactivity Standard	Uranium-232 Radioactivity Standard Solution	Polonium-209 Radioactivity Standard	Thorium-229 Radioactivity Standard	Curium-243 Radioactivity Standard	Plutonium-239 Radioactivity Standard
Unit of Issue	(5 mL)	(5 mL)	(5 mL)	(5 mL)	(5 mL)	(5 mL)	(5 mL)	(5 mL)	(5 mL)	(5 mL)	(5 mL)	(5 mL)	(5 mL)	(5 mL)	(5 mL)	(3 mL)
Approx. Massic Activity (Bq/g)	54,000	85 000	221 100	32 000	382 600	20 000	30 000	35	250	134	23	30	39**	35	31	40
Chemical Form	n-hexadecane	$NiCl_2$	CsCl	$SrCl_2$	$BaCl_2$	$HoCl_3$	$KTcO_4$	$Cm(NO_3)_3$	$UO_2(NO_3)_2$	$Am(NO_3)_3$	$Pu(NO_3)_6$	$UO_2(NO_3)_2$	$PoCl_4$	$Th(NO_3)_4$	$Cm(NO_3)_3$	$Pu(NO_3)_6$
Decay Modes	β-	β-	β-;γ	β -	EC	γ	β−	α	α	α	α	α	α, EC	α	α	α
NRC License or Equivalent Required*	--	X	X	X	X	X	--	X	X	X	X	X	X	X	X	X
Reference Time (month/year)	09/14	11/09	08/18	12/06	07/18	02/06	05/08	09/11	03/17	3/19	10/16	7/02	12/13	12/07	05/19	05/09

*If no "X", then license is not required unless the institution possesses a specific license that covers the listed radionuclide.
**Value for Approximate Massic Activity for SRM 4326a is expressed as $s^{-1} \cdot g^{-1}$.

- Certified values are normal font
- Reference values are italicized
- Values in parentheses are for information only

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4332E Americium-243 Radioactivity Standard (5 mL)	4334j Plutonium-242 Radioactivity Standard (5 mL)	4337 Lead-210 Radioactivity Standard (5 mL)	4338A Plutonium-240 Radioactivity Standard Solution (5 mL)
40	26	9 000	40
$Am(NO_3)_3$	$Pu(NO_3)_6$	$Pb(NO_3)_2$	$Pu(NO_3)_6$
α	α	β-	α
X	X	X	X
10/08	08/17	06/06	05/96

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SRM	4339b	4340B	4341a	4342A	4361C	4370d	4915F	4919I	4926E	4927g	4929F	4943	4949d	4965a	4966A	4967A	4969
Description	Radium-228 Radioactivity Solution	Plutonium-241 Radioactivity Standard	Neptunium-237 Radioactivity Standard	Thorium-230 Radioactivity Standard	Hydrogen-3 Radioactivity Standard	Europium-152 Radioactivity Standard	Cobalt-60 Radioactivity Standard Solution	Strontium-90 Radioactivity Standard	Hydrogen-3 Radioactivity Standard	Hydrogen-3 Radioactivity Standard	Iron-55 Radioactivity Standard	Chlorine-36 Radioactivity Standard	Iodine-129 Radioactivity Standard	Radium-226 Radioactivity Standard	Radium-226 Radioactivity Standard	Radium-226 Radioactivity Standard Solution	Radium-226 Radioactivity Standard
Unit of Issue	(5 mL)	(5 mL)	(5 mL)	(5 mL)	(500 mL)	(5 mL)	(5 mL)	(5 mL)	(20 mL)	(5 mL)	(5 mL)	(3 mL)	(5 mL)	(5 mL)	(5 mL)	(5 mL)	(5 mL)
Approx. Massic Activity (Bq/g)	200	250	150	40	2	18 700	60 000	4 200	5 000	540 000	59 000	10 000	2 700	30	290	2 500	3
Chemical Form	$Ra(NO_3)_2$	$Pu(NO_3)_6$	$Np(NO_3)_5$	$Th(NO_3)_4$	H_2O	$EuCl_3$	$CoCl_2$	$SrCl_2$	H_2O	H_2O	$FeCl_3$	NaCl	NaI	$RaCl_2$	$RaCl_2$	$RaCl_2$	$RaCl_2$
Decay Modes	β-	β-	α	α	β-	β-;EC,γ	β-;γ	β-	β-	β-	EC, β-	β-	β-	α, γ	α, γ	α, γ	α, γ
NRC License or Equivalent Required*	X	X	X	X	--	X	X	X	--	--	--	--	X	X	X	X	X
Reference Time (month/year)	10/10	06/07	09/12	04/07	09/98	7/18	11/05	12/06	09/98	05/15	11/05	12/84	01/14	01/07	01/07	09/03	09/98

*If no "X", then license is not required unless the institution possesses a specific license that covers the listed radionuclide.
**Value for Approximate Massic Activity for SRM 4326a is expressed as $s^{-1} \cdot g^{-1}$.

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